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(54) ANALOG-TO-DIGITAL CONVERTER

(57) Abstract:

PURPOSE: To obtain an accurate output with a small number of comparators, by comparing an analog input with each set of plural resistors to obtain high- order bits and at the same time obtaining low-order bits through comparison among the selected sets of registers.

CONSTITUTION: The analog input voltage V_{in} is supplied to the voltage comparators M_1@M_3 for high-order bits as well as to the voltage comparators N_1@ N_3 for low-order bits. The (m) sets of (n) units of resistors R_1@R_{16} having an equal level of resistance value are connected in series between a reference voltage source Vr and the earth, and the joint between the sets is connected to the input terminal of each of the comparators M_1@M_3. When the voltage V_{in} is equal to the voltage at a point (1), only P_1 of the output P of the comparator M_1 is set at 1. Then only FETs Q_{21}@Q_{23} which are provided between the joints of the resistors R_5@R_8 and the comparator N_1 are turned on, and only the output Q_1 of the comparator N_1 is set at 0.